

Claims:

1. A system (10) for collecting and recording data (38) on an item (12a) as the item experiences changes in state over time, with first data input means (36)
5 for capturing a first set of data (38) pertaining to a first state of the item (12a) in a first environment (14a), said system being characterized by second data input means (36) for capturing a second set of data (38) pertaining to a second state of the item (12b) in a second environment (14b); data processing means (22) for storing said first and second sets of data (38) in a
10 database (26) and selectively accessing said first and second sets of data (38) from said database (26); and communication means (20) for communicating said first and second sets of data (38) to said data processing means (22).
2. The system (10) of Claim 1, further characterized by transportable data
15 storage means (40) for receiving and storing a third set of data (38), said transportable data storage means (40) physically accompanying the item (12a) for a selected length of time.
3. The system (10) of Claim 2, further characterized by a third data input means (36) for reading said transportable data storage means (40) and accessing
20 said third set of data (38).
4. The system (10) of Claim 3, further characterized by a first output means (45) for writing a fourth set of data (38) to said transportable data storage means (40, 46).

5. The system (10) of Claim 3, characterized in that said first and second sets of data (38) at least partially include data (38) observed about the item in the first (14a) and second (14b) environments, respectively.

6. The system (10) of Claim 4, characterized in that said third set of data (38) is captured by at least one of said first and second data input means (36).

7. The system (10) of Claim 4, characterized in that a portion of at least one of said first and second sets of data (38) is included in said fourth set of data (38).

8. The system (10) of Claim 7, characterized in that a portion of said third set of data (38) is included in said fourth set of data (38).

9. The system (10) of Claim 4, characterized in that said first output means (45) is selected from the group consisting of: a 2D barcode label printer, a Data Matrix label printer, a barcode label printer, a text label printer, a magnetic card writer, a magnetic stick writer, a floppy disk writer, and a CD writer.

10. The system (10) of Claim 3, characterized in that said third data input means (36) is selected from the group consisting of: a 2D barcode label reader, a Data Matrix label reader, a CCD camera, a barcode reader, a magnetic stripe reader, a magnetic card reader, an EID tag reader, and RFID reader, a color-coded image reader, a cell phone, a magnetic stick reader, a CD reader, a floppy disk reader and an optical character reader.

11. The system (10) of Claim 2, characterized in that said transportable data storage means (40) is selected from the group consisting of: a 2D barcode label, a barcode label, an EID tag, an RFID, a color-coded image, a Data

Matrix label, a magnetic stripe, a magnetic card, a magnetic stick, a ROM chip, a text label, a floppy disk and a CD disk.

12. The system (10) of Claim 1, characterized in that said first data input means (36) is selected from the group consisting of: a Personal Digital Assistant (PDA), a cell phone, a digital camera, a handheld computer, a personal
5 computer with keyboard, and a weighing scale.

13. The system (10) of Claim 1, characterized in that said data processing means (22) includes a computer (24) programmed with database management software.

10 14. The system (10) of Claim 1, characterized in that said communications means (20) includes a network and said data processing means (22) is connected to said network.

15. The system (10) of Claim 14, characterized in that said network (20) is the internet.

15 16. A method for tracking an item (12a) as it changes state (12a, 12b, 12c) and environment (14a, 14b, 14c) over time by:

(A) collecting and recording a first set of data (38) pertaining to an item (12a) in a first state in a first environment (14a); said method being characterized by

20 (B) changing at least one of the first state (12a) and the first environment (14a) of the item (12a) to a second state (12b) and a second environment (14b);

(C) collecting and recording a second set of data (38) pertaining to the item (12a, 12b);

(D) communicating the first and second sets of data (38) to a data processing system (22);

5 (E) storing the first and second sets of data in a database (26) of the data processing system (22); and

(F) Selectively accessing at least a portion of the first and second data (38) sets.

10 17. The method of Claim 16, further characterized by the step of reading a third set of data (38) from first media (40, 50) physically accompanying the item (12a).

15 18. The method of Claim 17, further characterized by the step of writing a fourth set of data (38) on second media (40, 50), said second media (40, 50) then being physically associated with the item (12a) to accompany the item (12a) for further changes in environment (14a, 14b).

19. The method of Claim 16 characterized in that said step (A) of collecting includes capturing observed data (38) concerning the item (12a) when the item (12a) is in the first environment (14a).

20 20. The method of Claim 18, characterized in that the step (A) of collecting includes capturing observed data (38) concerning the item (12a) when the item (12a) is in the first environment (14a), the step of communicating includes transmitting the first set of data (38) over the internet (20) to the data

processing system (22), the step of storing includes entering the first set of data (38) into a database (26) on the data processing system (22) and the step of selectively accessing includes submitting a query via database management software to select data (38) from the database (26) in response to a user-defined criterion.

21. The method of Claim 16, characterized in that said step of accessing is conducted in the course of identifying the source of a health threat associated with the item (12a, 12b, 12c).

22. The method of Claim 21, characterized in that the item (12a) is a food product.

23. The method of Claim 16, characterized in that the item (12c) is a component of a composite item (12a, 12b) having additional compositional items (12b, 12c) and further comprising the steps of tracking the additional compositional items (12b, 12c) and the composite item (12a, 12b) by performing the steps (A) through (F) for each.

24. The method of Claim 16, characterized in that the item (12a) is the performance record of an athlete.

25. An item tracking system (10) for collecting and recording data (38) on an item (12a) as the item (12a) experiences changes in state over time, said item tracking system (10) being characterized by:

- (A) a server computer (22) with data processing capability and a database (26), said server computer (22) connected to the internet (20);

(B) a plurality of geographically separated node systems (18a, 18b, 18c) connectable to the internet (20) , each of said plurality of node systems (18a, 18b, 18c) capable of capturing data (38) concerning the item (12a) at various times and states of (22) the item (12a, 12b, 12c) and communicating the captured data (38) to the server (22) via the internet (20) for storage in said database (26), said server computer (22) capable of generating a history of said item (12a) from the data (38) captured and sent to said server (22) from said plurality of node systems (18a, 18b, 18c).

- 10 26. The tracking system (10) of Claim 25, further characterized by a label reader (36f₁) associated with at least a portion of said plurality of node systems (18e, 18f), said label reader (36e, 36f₁) capable of reading labels (46d, 46e) physically associated with the item (12e, 12f) to obtain label data (40) and communicating that label data (40) to said server (22).
- 15 27. The tracking system (10) of Claim 26, further characterized by a label printer (45d, 45e, 45f₁, 45f₂), said label printer (45d, 45e, 45f₁, 45f₂) printing labels representative of data (38) concerning the item (12e) and thereby permitting the item (12e) to be relabeled with data (38) that reflects an up-to-date product history.
- 20 28. The tracking system (10) of Claim 27, characterized in that the type of label (46d, 46e, 46f) produced by said label printer (45d, 45e, 45f₁, 45f₂) is selected from the group consisting of: 2D barcode label, Data Matrix label, barcode label and text label.

29. The tracking system (10) of Claim 27, characterized in that the label (46d, 46e, 46f,) printed by said label printer (45d, 45e, 45f₁, 45f₂) includes the internet address of said server (22) and identification data for identifying the item (12a, 12b, 12c).

5 30. The tracking system (10) of Claim 25, characterized in that the captured data (38) on the item (12a, 12b, 12c) is communicated to said server (22) along with data (38) indicative of the geographic location of the item and time.

31. The tracking system (10) of Claim 30, wherein said at least one of said plurality of node systems (18a, 18b, 18c) includes a cell phone.

10 32. The tracking system (10) of Claim 31, wherein said cell phone has imaging capability.

33. The tracking system (10) of Claim 32, wherein said cell phone is capable of capturing and transmitting label image data over the Internet for subsequent processing by a remote computer.

15 34. The system (10) of Claim 1, further including display means (30) associated with at least one of said first data input means and said second data input means for displaying at least one of said first set of data and said second set of data.

20 35. The system (10) of Claim 34, wherein at least one of said first set of data (38) and said second set (38) of data includes identification data (56a-56e) pertaining to said first environment (14a, 14b, 14c) and said second environment (14a, 14b, 14c), respectively.

36. The system (10) of Claim 35, wherein said identification data (56a-563) includes an internet address (54a) for connecting to a website associated with at least one of said first environment (14a, 14b, 14c) and said second environment (14a, 14b, 14c).

5 37. The system (10) of Claim 2, wherein said third set of data (38) is selectively composed of at least one of said first set of data (38) and said second set of data (38).

38. The system of Claim 14, wherein said communication means (44) includes a wireless connection to the internet (20).

10 39. The method of Claim 16, wherein said steps (A) and (C) of collecting and recording pertain to identification of information (38) for a person.

40. The method of Claim 39, wherein said identification information (38) is utilized to track a person for the purposes of at least one of scheduling, security and timekeeping.

15 41. The method of Claim 16, wherein said steps (A) and (C) of collecting and recording pertain to access data (38) controlling the access of a person to a secure site.

42. The method of Claim 41, wherein at least one of said steps (A) and (C) of collecting includes retrieving data (38, 40) from an access token (40, 40d, 46d-46f) carried by a person.

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43. The method of Claim 42, wherein said access token (40, 40d, 46d-46f) is in the form of an ID card bearing digitally recorded data (38, 40).